to show that this portion may effectually supercede all the rest, in common practical use.

This substance, when separated from the hops by rubbing and sifting, exists in the form of a fine yellow powder. It is adhesive when rubbed between the fingers, and becomes agglutinated by moderate heat. It is very inflammable, and burns entirely out with a white flame, leaving a light cinder.

Dr. Ives has made a variety of experiments with this powder, from which he concludes that it consists of tannin, extractive matter, a bitter principle, wax, resin, and a woody fibrous substance, besides the aromatic principle, which he was unable to separate in the form of volatile oil. It may be observed, that the powder, as employed by him, being obtained from the hops by agitation and sifting, must necessarily contain a certain portion of chaff or minute fragments of the scales; and that these are apparently the seat of the tannin, the woody insoluble substance, and possibly of some other ingredients. If the pure secretion be carefully separated from the scales by brushing, and dissolved in alcohol, it does not undergo any change of colour from the sulphate of iron; although the scales themselves, as well as the



leaves of the plant, strike a black colour when treated with that salt.

Hops have long been made an ingredient in malt liquors on account of the agreeable flavour they communicate, and also from a preservative quality which they are supposed to exert in preventing acescency in those liquids. Dr. Ives has shown that a prodigious saving of expense might be made by brewers, if this powder were separated at an early period, and used instead of the hops themselves. He was able, without much trouble, to separate fourteen ounces of the powder from six pounds of hops, and concludes, that if the hops were treated, during the process of gathering and drying, with a view to the preservation of the powder, they would yield at least one pound in six. He has pointed out a vast saving, which would take place in the expense of transportation and storage, if an article containing all the strength of the hop, and occupying but small compass, were substituted for one which is of more than twenty times its bulk. An enormous loss would farther be prevented, which now takes place from the absorption produced by the hops, it being calculated that one barrel of wort is absorbed by every sixty pounds of hops used in brewing. He enumerates still